

US CLAIMS

1. Particle detector comprising means (1, 2, 3, 7a) of delivering a first electrical pulse (Va) starting from a detected particle, and means (4) of counting first electrical pulses thus delivered, characterized in that
5 it comprises:

- means (7b) of creating a second electrical pulse (Vb) forming a detection inhibition signal starting from a detected particle, sent to at least one neighboring detector to prevent the
10 neighboring detector from detecting the detected particle that corresponds to the first delivered electrical pulse (Va), and
- means (8, 9) of inhibiting the detection of particles under the action of an inhibition signal
15 originating from at least one neighboring detector.

2. Particle detector according to claim 1, characterized in that the means (8, 9) of inhibiting
20 particle detection comprise:

- a first switch (8) installed on the input side of the counting means (4), and
- a control circuit (9) that outputs a control signal for the first switch (8) as a function of
25 inhibition signals output from neighboring detectors.

3. Particle detector according to claim 2, characterized in that the control circuit (9) is a "NOR" or "OR" logical gate, and the inhibition signals output from neighboring detectors are applied to the inputs of
5 this logical gate.

4. Particle detector according to claim 1, characterized in that it comprises:

- 10 - means (10, 11) of preventing the transmission of the inhibition signal (Vb) to the neighboring detector if the first delivered electrical pulse (Va) corresponds to a predetermined energy, and
- 15 - means (12) of preventing counting of the first delivered electrical pulse corresponding to the predetermined energy, under the action of an inhibition signal output from a neighboring detector and received in a time window with a predetermined duration beginning with detection of the first electrical pulse (Va).

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5. Particle detector according to claim 4, characterized in that the means (10, 11) of preventing transmission of the inhibition signal to the neighboring detector comprise:

- 25 - a second switch (11) that receives the second electrical pulse (Vb) on a first terminal and for which a second terminal is connected to at least one input of at least one control circuit (9) of a neighboring detector, and

- a circuit (10) for evaluating the predetermined energy, in which the output signal forms a control signal for the second switch (11),
and in that the means (12) of preventing counting of the
5 first pulse (Va) comprise delay means placed on the input side of the first switch (8).

6. Particle detector according to either claim 4 or 5, characterized in that the predetermined energy is a
10 fluorescence photon energy.

7. Particle detector according to claim 1, characterized in that the duration (Tb) of the second electrical pulse (Vb) is longer than the duration (Ta) of
15 the first electrical pulse (Va).

8. Particle counting device comprising several particle detectors, characterized in that the particle detectors are detectors according to any one of claims 1
20 to 7.

9. Particle counting device according to claim 8, characterized in that the particle detectors are arranged in the form of a matrix of detectors.
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10. Particle counting device according to claim 9, characterized in that the detectors adjacent to a detector D_{ij} located at the intersection of the row rank

i and column rank j of the matrix of detectors are detectors $D(i,j-1)$, $D(i,j+1)$, $D(i-1,j)$, $D(i+1,j)$.

11. Process for reading a particle detector matrix,
5 characterized in that when a first detector detects a particle, it includes an inhibition step to inhibit at least one second particle detector adjacent to the first particle detector.

10 12. Read process according to claim 11, characterized in that it comprises a step to evaluate if a first electrical pulse (V_a) delivered by the first particle detector has a predetermined energy, and if so to avoid implementing the inhibition step and not count
15 the first delivered electrical pulse (V_a) if the second particle detector detects a particle in a time window with a predetermined duration beginning with detection of the first particle by the first detector.

20 13. Read process according to claim 12, characterized in that the predetermined energy is a fluorescence photon energy.